CAP-Malaria Project

Year 5 Work Plan - Cambodia

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CONTENTS

ACRONYMS **2**

EXECUTIVE SUMMARY **4**

1 BACKGROUND AND CONTEXT **6**

2 PROJECT GOAL AND OBJECTIVES **9**

3 YEAR 4 ACHIEVEMENTS TO DATE AND PROGRESS **10**

3.1 YEAR 4 KEY PROJECT ACTIVITIES, RESULTS, CHALLENGES, AND WAY FORWARD IN YEAR 5 10

3.2 CHALLENGES AND OPPORTUNITIES 12

3.3 COLLABORATION WITH CNM AND OTHER STAKEHOLDERS 13

4 YEAR 5 TARGET, KEY ACTIVITIES AND JUSTIFICATION BY OD **13**

4.1 BATTAMBANG OPERATIONAL HEALTH DISTRICT (BTB OD) 14

4.2 SAMPOV MEAS OPERATIONAL HEALTH DISTRICT (SPM OD) 16

4.3 SAMRONG OPERATIONAL HEALTH DISTRICT (SRG OD) 19

4.4 STUNG TRENG OPERATIONAL HEALTH DISTRICT (STT OD) 20

4.5 THE NORMAL CONTROL ACTIVITIES FOR SPL OD: 22

5 YEAR 5 DETAIL ACTIVITIES AND JUSTIFICATION BY IRS **22**

5.1 IR1: USE OF PREVENTIVE INTERVENTIONS INCREASED IN CAP-MALARIA TARGET AREAS 23

5.2 IR2: USE OF QUALITY MALARIA DIAGNOSIS AND APPROPRIATE TREATMENT (EDAT) INCREASED 24

5.3 IR3: USE OF STRATEGIC INFORMATION FOR DECISION MAKING INCREASED 28

5.4 IR 4: MALARIA CONTROL SERVICES FOR MOBILE POPULATIONS STRENGTHENED THROUGH INTER-AGENCY 29

6 PROJECT M&E **30**

7 PROJECT MANAGEMENT AND STAFFING PLAN **33**

8 PROCUREMENT PLAN **34**

9 CAP-MALARIA EXIT STRATEGY **34**

ANNEX: **36**

YEAR 5 ACTIVITIES (OCT 15- SEP 16) **36**

ACRONYMS

ACT	Artemisinin-based Combination Therapy
AD	Administrative district
ANC	Ante Natal Care
AOP	Annual Operational Plan
API	Annual Parasite Incidence
ARM	Artemisinin Resistant Malaria
ASMQ	Artesunate Mefloquine
BCC	Behavior Change Communication
BMP	Border Malaria Post
CAP-Malaria	Control and Prevention of Malaria
CIF	Case Investigation Form
CMDG	Cambodian Millennium Development Goals
CNM	National Malaria Center
EDAT	Early Diagnosis and prompt Treatment
FDH	Former District Hospital
GF	Global Funds for AIDs, Tuberculosis, and Malaria
GMS	Greater Mekong Sub region
HC	Health Center
HF	Health Facility
HH	Household
HP	Health Post
IPC	Interpersonal communication
IRS	Indoor Residual Spray
LLIN	Long Lasting Insecticidal Net
LLIHN	Long Lasting Insecticidal Hammock Net
MCC	Malaria Control in Cambodia
MDR	Multi-drug Resistance
MMP	Mobile and Migrant Population
MMW	Migrant Malaria Worker
NFM	New funding model
NGO	Non-Government Organization
NMCP	National Malaria Control Program
NTG	National Treatment Guidelines
OD	Operational District
Pf	*Plasmodium falciparum*
Pv	*Plasmodium vivax*

PHD	Provincial Health Department
PPM	Public Private Mix
PSA	Public service announcement
PSI	Population services international
PSK	Population services Khmer
PQ	Primaquine
QA	Quality Assurance
RAI	Regional Artemisinin Initiative
RDT	Rapid Diagnostic Test
RH	Referral Hospital
RIG	Regional Inspector General
SOP	Standard Operating Procedure
TFU	Treatment follow-up
UNOPS	United Nations Office for Project Services
URC	University Research Co, LLC.
USAID	United States Agency for International Development
VHSG	Village Health Support Group
VHV	Village Health Volunteer
VMW	Village Malaria Worker
WHO	World Health Organization
WMD	World Malaria Day

ACRONYMS OF TARGET PROVINCES AND ODs:

SPM	Sampovmeas
PST	Pursat
BTB	Battambang
SPL	Sampov Loun
SRG	Samrong
OMC	Oddar Meanchey
STT	Stung Treng

EXECUTIVE SUMMARY

In its last year (Fiscal Year 5: October 2015 to September 2016), the Control and Prevention of Malaria (CAP-Malaria) project will continue to assist the Cambodian National Center for Malaria Control, Parasitology and Entomology (CNM) in its efforts to reduce malaria morbidity and mortality and, step by step, to eliminate malaria nationwide by 2025. The project has been working closely with all stakeholders to prevent the spread of Artemisinin-resistant malaria (ARM) in the affected areas of Cambodia.

Over the past 4 years, the incidence of malaria in Cambodia has decreased from 7.98 cases per 1,000 populations in 2011 to 3.60 in 2014. In CAP-Malaria target areas (11 Operational Districts or ODs), the malaria incidence decreased from 22.31 cases per 1,000 in 2011 to 11.43 in 2014. Malaria mortality countrywide also decreased over the last 4 years. Ninety-three, 45, and 12 deaths were recorded in 2011, 2012, and 2013 respectively. These declines represent reductions of 40%, 51%, and 74% respectively, from each previous year. The number of deaths due to malaria increased to 18 in 2014 for reasons that are not fully clear, but the situation will continue to be monitored.

By 2014, of 45 malaria endemic ODs, 13 ODs reached pre-elimination status (Annual Parasite Incidence or API <1 case /1,000 population at risk). Sampov Loun (SPL) OD in CAP-Malaria target is one among the 13 ODs (API: 0.78/1,000).

In its year 4, CAP-Malaria project supported CNM in 11 ODs in 9 provinces. In year 5, as its exit strategy, CAP-Malaria will phase out 6 ODs of 6 provinces (Pailin OD of Pailin province, Maung Russey OD of Battambang province, Poipet OD of Banteay Meanchey province, Sotnikum OD of Siem Reap province, Senmonorum OD of Mondulkiri province and Banlung OD of Ratanakiri province). The project will continue its support in 5 ODs of 4 provinces (Battambang OD or BTB of Battambang province, Sampov Meas OD or SPM of Pursat province, Samrong OD or SRG of Oddar Meanchey province, Stung Treng OD or STT of Stung Treng province and Sampov Loun OD or SPL of Battambang province) where the majority of village malaria workers (VMWs) are directly managed by the project. CAP-Malaria will work closely with its counterparts and partners including non-health stakeholders, especially with VMW/MMWs and rural health facilities (HFs) to provide comprehensive malaria prevention and treatment services to its target population. The project will continue to implement the basic essential package of activities for malaria pre-elimination in SPL OD (SPL Plan).

In line with CNM and stakeholders, CAP-Malaria's goal is to reduce malaria morbidity and mortality, prevent the spread of Artemisinin resistance in the greater Mekong sub-region (GMS) and, eventually pre-eliminate/eliminate malaria in a number of project target areas in Cambodia. To reach this goal, the project set up strategic objectives as below:

- Target vulnerable populations with a focus on hard to reach groups through adequate vector control interventions to prevent the transmission of malaria
- Intensify malaria case management through quality diagnosis and prompt treatment at the community and health facility levels
- Strengthen the managerial capacity of the CNM, Provincial Health Departments (PHDs), ODs, and Health Facilities (HFs) and support the establishment and maintenance of strategic information for malaria interventions
- Strengthen malaria control services for mobile populations through inter-agency and inter-country collaboration
- Support pre-elimination/elimination interventions in SPL OD

The year 5 activities consist of:

- LLIN monitoring and topping up at households (HHs) and farms along with health education, emphasizing interpersonal communication (IPC) to target population (22,059 LLINs/LLIHNs)
- Malaria diagnosis and case management conducted by VMWs/MMWs and HF staff. DOT is applied to all malaria patients (CAP-Malaria project is supporting VMWs' costs for DOT implementation)
- Case treatment follow up: *all Pf*/*Mix* malaria cases are registered in treatment follow up form (TFU) ensuring complete follow up for 3 days DOT in 4 HCs of SRG OD, Pf Day-3 positive surveillance in 2 HCs of STT OD, follow up until Day-7 in 4 HCs of SRG OD, in 2 HCs of SPM OD and in 5 HCs of BTB OD
- Ensure supply chain management for laboratory diagnostics, Rapid Diagnostic Tests (RDTs), Artemisinin-based Combination Therapies (ACTs) and other commodities, including LLINs and LLHINs
- Improve quality of diagnostics through laboratory Quality Assurance (QA) as well as supportive supervision
- Improve capacity of service providers (VMWs/MMWs and HF staff) through trainings (278 HF staff and 507 VMW/MMWs), technical supervision (89 HFs and 238 villages & 18 farms)
- Support VMW/MMWs monthly meetings at HF level (507 VMW/MMWs participated)
- Conduct quarterly/semi-annual progress review at OD level to monitor AOP implementation (10 sessions)
- Conduct strategic information dissemination at OD and national levels (6 sessions)
- Promote provincial/district special working group for malaria elimination (8 sessions)
- Conduct project end-line surveys (HH and Migrant) and activity assessment

A highlight in the final project year will be the implementation and documentation of the testing results of SOPs and tools for the basic essential package of activities for malaria pre-elimination in SPL OD. These results will be shared with CNM and its partners.

CAP-Malaria will continue operations in all the target ODs until the end of September 2016 and will discuss and negotiate with CNM on handing over at the right time as appropriate.

The activity and costing matrix is attached in a detailed table at the end of this document (annex). The total budget requested for year 5 work plan is 1,280,000 US$. This budget covers all the activities in 5 ODs (BTB, SPM, SRG, STT, and SPL). Activities in SPL OD covered in this Y5 workplan are the normal control activities that are not included in the basic essential package of activities under the previously approved SPL pre-elimination workplan.

1 BACKGROUND AND CONTEXT

By 2014, Cambodia has 25 provinces with a little over 15 million populations. 21 provinces are classified as malaria endemic area with more than half of the population still at risk (an estimated 8.6 million people). The northeast region of the country still accounts for over 70% of the malaria burden, mainly along the forested borders of Viet Nam, Lao People's Democratic Republic, and Thailand.

In 2011, the royal government of Cambodia endorsed the *National Strategic Plan for malaria elimination (2011-2025),* which led to increased coverage of malaria control interventions.

Since 2009, community malaria workers (VMW/MMWs) has been scaled up to all high endemic villages in order to support malaria services provided at HFs ensuring service coverage to hard to reach population.

During the past 10 years, malaria cases decreased drastically from 113,855 cases in 2004 to 56,271 cases in 2014 (figure 1).

During the last 4 years, the number of malaria confirmed cases in Cambodia has halved from 112,057 cases in 2011 to 44,748 cases in 2013 before increasing to 56,271 cases in 2014. Malaria mortality also decreased from 96 in 2011 to 18 deaths in 2014 (figure 1). Approximately 50% of malaria cases reported had been captured by community volunteers (figure 2&3).

During the first 6 months of 2015, according to data from MIS/HIS, malaria cases had been steadily increased by 31% (23,939/18,231). Based on findings from outbreak response, there have been movements of new settlers to high malaria endemic area for land clearance to be used for agricultural farming or selling.

By 2014, of 45 malaria endemic ODs, 13 ODs reached pre-elimination status (API <1 case /1,000 population at risk). Sampov Loun OD (API: 0.78/1,000) in CAP-Malaria target is one among the 13 ODs (MIS/HIS).

Figure1. Number of malaria treated cases and deaths by year in Cambodia (2001-2014)

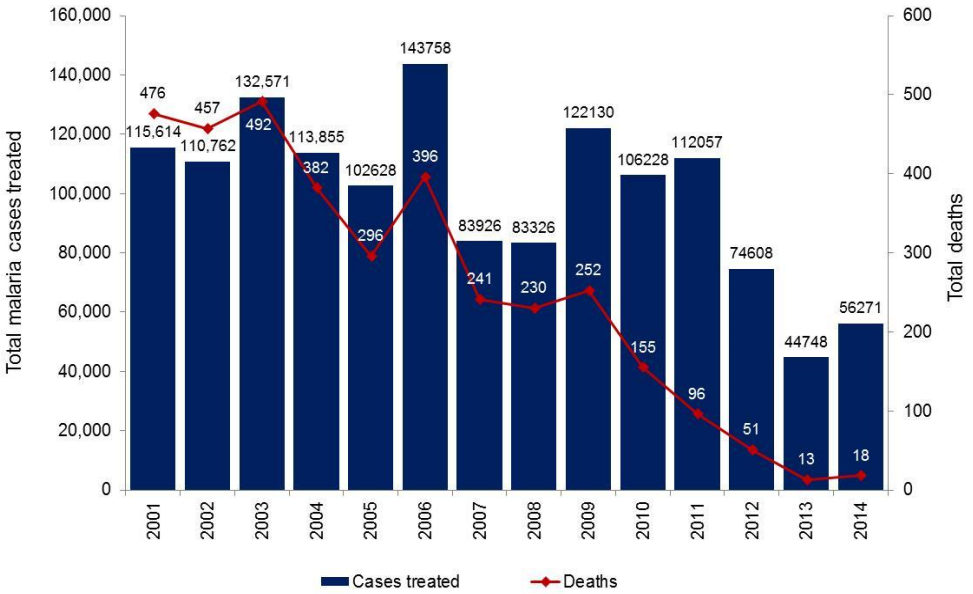
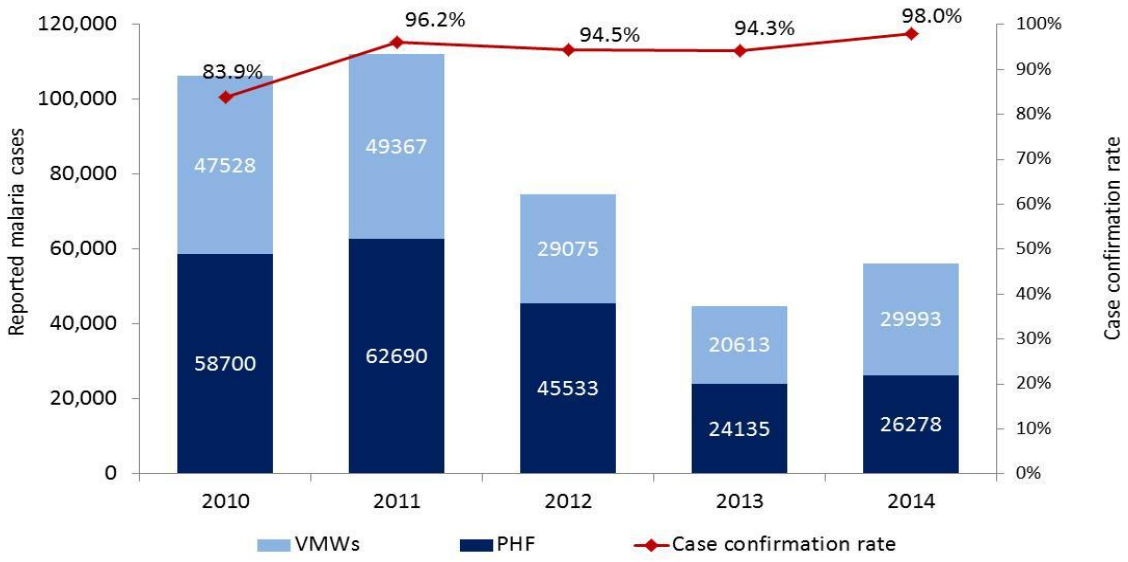
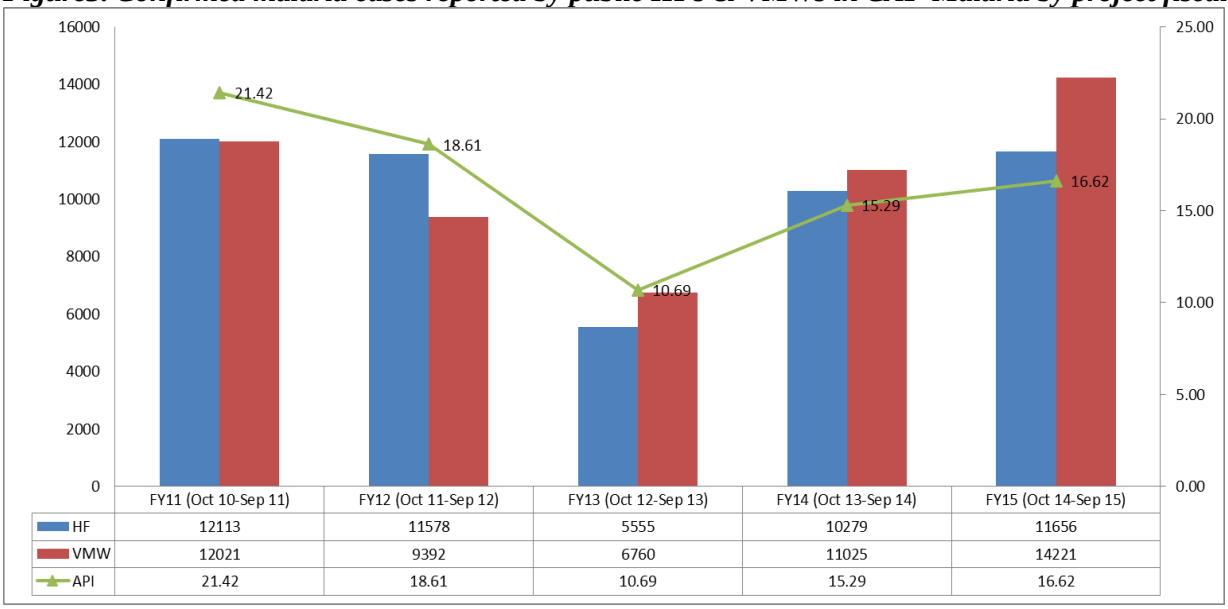


Figure2. Confirmed cases reported by year by HFs and VMWs countrywide (2010-2014)



Data Source: CNM/MOH

Figure3. Confirmed malaria cases reported by public HFs & VMWs in CAP-Malaria by project fiscal years



	FY11 (Oct 10-Sep 11)	FY12 (Oct 11-Sep 12)	FY13 (Oct 12-Sep 13)	FY14 (Oct 13-Sep 14)	FY15 (Oct 14-Sep 15)
HF	12113	11578	5555	10279	11656
VMW	12021	9392	6760	11025	14221
API	21.42	18.61	10.69	15.29	16.62

Data Source: HIS & MIS

Malaria continues to be concentrated in border areas which have a higher number of malaria cases, particularly in Western, Northern and Eastern Cambodia bordering with Thailand, Laos and Vietnam, where migrant workers cross the borders for employment in farms, in construction and in other sectors. The areas are forested and mountainous where road and public health infrastructure are not sufficient covered. Reaching these at-risk populations remains challenging, and their mobility results in malaria parasites being carried back and forth between work sites and villages, putting workers' families and neighbors at risk.

A roadblock for malaria prevention is the limited outdoor prevention measures and the universal coverage of long lasting insecticidal nets and hammock nets (LLIN/LLIHN) only proof to be effective for indoor prevention.

An ongoing challenge is the emergence of Artemisinin-resistant malaria. New NTG 2014 had been developed based on ARM profile of targets provinces. 9 provinces were classified as tier 1 where DHA-PIP is no longer effective, need to be switched to ASMQ. But the delay arrival of the later may increase Artemisinin selection pressure (parasites resistance to Artemisinin) and malaria case increased (lost preventive effect) as the former are already reducing its effect on Pf parasites.

During June-July 2015, due to malaria case had increased sharply in some area, the routine supplies system could not response to the demand, especially at VMW/MMWs leading to local arrangement to send patients from village to HFs for malaria treatment. This issue had been solved in August, partly thanked to DHA-PIP donation from Medecin Sans Frontier (MSF) that made quick supply directly from CNM to the fields. The complaints also came from private providers who said they didn't get the amount of ACT needs from PSK.

The success of the Malaria Control Program in Cambodia depends on the following: quality early diagnosis, effective treatment and contact tracing of malaria cases, preventive measures where needed, a strengthened supply chain system that ensures timely availability of quality ACTs and RDTs, and behavioral change interventions to ensure the use of long lasting insecticidal nets (LLINs) and other preventive tools in high endemic malaria areas among vulnerable populations.

In 2015, with support from WHO and partners, Cambodian elimination action framework (2016-2020) had been developed based on the national strategic plan for malaria elimination in Cambodia (2011-2025). Intervention strategies will cover a wide range of activities to increase the capacity of the malaria program, its tools and prepare the country for elimination. The specific objectives of the framework are tailored to the scale-up of these key elimination strategies:

1) Providing effective program management and coordination at all levels to efficiently deliver a combination of targeted interventions for malaria elimination by 2017
2) Achieving universal coverage of case management services by 2016 to ensure 100% parasitological diagnosis of all suspected cases and effective, efficacious treatment of all confirmed cases
3) Protecting at least 90% of all populations at risk of malaria with an appropriate vector control intervention by 2017
4) Enhancing the surveillance system to detect, immediately notify, investigate, classify and respond to all cases and foci by 2017 to move toward malaria elimination

5) Implementing comprehensive IEC/BCC approach that facilitates at least 90% of people seeking treatment for fever within 24 hours in appropriate health facility/with care provider and at least 85% of at-risk population utilizing an appropriate protection tool by 2017.

CAP-Malaria activities will be ended by September 2016 in its target ODs with gradual turnover of activities to CNM and local counterparts to ensure uninterrupted services and readiness of local health system.

In its remaining period, CAP-Malaria will support CNM/ODs/HFs to:

- Develop AOP, implement it and monitor the progress
- Scale-up quality laboratory diagnostics for confirming malaria cases
- Improve capacity of VMWs/MMWs for treating malaria cases with 3 days DOT
- Conduct Pf Day-3 surveillance in tier 2 area to monitor drug resistance to ACT
- Improve detection of treatment failure through 7 days follow up and support 2nd line treatment
- Supervise VMWs and HF staff performance to ensure quality of service delivery and reporting
- Provide effective IPC on LLIN/LLIHN use, early diagnosis seeking and adherence to appropriate treatment.

2 PROJECT GOAL AND OBJECTIVES

Goal: To reduce malaria morbidity and mortality, delay the spread of Artemisinin resistance in the GMS and eventually pre-eliminate/eliminate malaria in a number of project target areas in Cambodia.

Objectives:

1) Develop and scale-up cost-effective vector control interventions to prevent the transmission of malaria;
2) Improve the quality and effectiveness of diagnosis and treatment of malaria at the community and health facility levels;
3) Reduce management bottlenecks of the CNM and local institutions to implement and monitor malaria control activities; and
4) Support the establishment and maintenance of strategic information for malaria control.

Translating these objectives into Cambodia context, the specific strategic approaches are to:

- Target vulnerable populations with a focus on hard to reach groups through adequate vector control interventions to prevent the transmission of malaria;
- Intensify malaria case management through quality diagnosis and prompt treatment at the community and health facility levels;
- Strengthen managerial capacity of the NCMP, PHDs, ODs and HFs and support the establishment and maintenance of strategic information for malaria interventions;

- Strengthen malaria control services for MMPs through inter-agency and inter-country collaboration;
- Support pre-elimination/elimination interventions in SPL.

3 YEAR 4 ACHIEVEMENTS TO DATE AND PROGRESS

3.1 Year 4 key project activities, results, challenges, and way forward in Year 5

In table1 below summarizes key project activities during year 4 (October 2014 to September 2015), implementation results, challenges, areas for improvement and way forward to year 5.

Table1. Summary of year 4 key project activities, results, challenges, and way forward

Planned activities in year 4	Annual targeted	Actual achieved	Challenges and areas for improvement	Way forward and year 5 activities
Prevention and BCC				
ITN distribution (Coverage of LLIN & LLIHN)	142,150 LLIN/LLIHN	122,413 (86%)	Ensuring optimal coverage for MMP remains challenging	Routine ITN monitoring and topping up: visit HH/Farm, check net, top up net if needed and conduct IPC Outbreak response: net assessment, net distribution, IPC, PSA & Community theater (SOP on outbreak response is in the development stage by CNM and partners) IPC/C training for HF staff
ITN monitoring (HH, Farm & Company)	63,473 HHs/Farms	50,144 (79%)	CAP-M has limited influence over the time management of VMWs (e.g. CNM VMWs)	
BCC/Education, focusing on IPC	219,000 persons	209,327	Reaching MMP	
BCC/Community mobilization (World Malaria Day, Malaria Week, Theater)	161 events	161 (100%)		Support WMD Support outreach Stop malaria week
Diagnosis and Treatment				
Case management training (HF Staff, VMW/MMW and PPs)	824 persons	904 (109%)	Trained 109 VMWs from the 3 HCs surveillance sites in Senmonorum OD before phasing out	Train only 10-15% of the health workers for replacing the turn over. Train all 80 PPs in SPL
Microscopy training (HF Lab Staff)	60 persons	49 (82%)		Train only the replacers and strengthen on-the-job training
Microscopy QA set up (18 new) and continued supervision	18/76 HFs	14/76 (78%)	Staff turnover Strengthen supervision	Maintain the existing 46 HFs in 4 ODs and set up 5 HFs

Planned activities in year 4	Annual targeted	Actual achieved	Challenges and areas for improvement	Way forward and year 5 activities
Proactive case investigation and retrospective case investigation	600 cases	327 (55%)	Among 512 cases of last year traced for retrospective cases investigation only 244 interviewed (patients or relative)	Pro-active case investigation (In SPL OD only)
Patient referral between VMW/PPs/HFs (for DOT, hospitalization, 2nd line treatment)	60 cases	46	Patient acceptance for hospitalization Non-registered PPs	Keep going
Malaria screening posts at border areas	21 posts	15	Patient tracing/follow up	Stop
VMW Meetings (VMW/MMW attended)	700	595	VMW turn over They have other personal priorities	Keep continue but for only 335 VMWs in the remaining 4 ODs. Another 168 VMWs in SPL who also participate in pre-elimination activities.
Program/logistic management training (OD/HF Staff)	199 staff	198 trained on logistics	Monitoring through monthly meetings	Supervision on logistics and supplies Stock monitoring and response
Strategic Information, Monitoring and Evaluation (M&E)				
OD AOP Development and Quarterly Progress Review	27 sessions	14	Progress review is not feasible on quarterly but rather semester basis	Encourage AOP progress review and result dissemination at PHD/OD levels
Technical supervision: OD/CAP-M->HFs HF/CAP-M>VMW/ MMW and PPs)	1,128 service delivery points	959 (85%)	Monthly supervision to VMW by HF staff is time constraint Supervision tools were revised	Supervision from CNM to CAP-M target OD-> HFs, quarterly basis HF-> VMWs monthly basis (focusing poor performers)
M&E related activities (retrospective case investigation, M&E Online system coaching and use, mHealth, RDQA, Schemes evaluation)		Online system, RDQA ongoing	Harmonization of project online with HIS & MIS Use of RDQA's findings	RDQA->PHD/OD level RDQA->HFs in technical supervision End-line survey (HH, Migrant and HF/OD) M&E tool dissemination at national level Develop new offline system that allows data input and automatic upload by e-mail
Multi-sectoral/Inter-country collaboration				
Provincial special working group for malaria elimination	9 meetings	3	Commitment of special working group	Advocacy by CAP-Malaria to ensure regular meetings at all provinces

Planned activities in year 4	Annual targeted	Actual achieved	Challenges and areas for improvement	Way forward and year 5 activities
Twin-cities collaboration	4 meetings	3	LOA was signed for data sharing. It requires follow up	Government ownership

3.2 Challenges and Opportunities

Mobile and Migrant Populations: MMPs are a hard to reach group due to their irregular mobility, especially those moving between non-malaria and malaria endemic areas, including cross-border populations. Groups of "Forest Goers" have been identified, a population that is hidden, independent and highly vulnerable to malaria. It is difficult to bring malaria services to them and identification of contact points for this group is crucial in order to establish accessible services for them.

Supply chain: Sometimes HFs and community volunteers experience shortages of RDTs, ACTs and lab reagent materials. CAP-Malaria has to facilitate communication with CNM/NMCP to ensure adequate supply of commodities from the central level, as well as locally mobilizing supplies among ODs and HFs. Monitoring showed that a number of RDTs and ACTs were expired.

Multi-sectorial collaboration: This activity is vital and CNM is highly expected by all stakeholders, both in-country and inter-country, to take the lead in coordination. It has been observed that CNM needs support for institutional and human resource development. The project activities and target have been also affected by the shifting support of other partners to CNM, e.g. GF nets have become available, it has been unnecessary for CAP-Malaria to distribute as many nets as expected and another outstanding example had been the lack of GF support for VMW/MMW meeting.

Private providers (PPs): The extent and quality of malaria case management by non-registered PPs is unknown as they are not included in the Public Private Matrix (PPM) scheme and are not supervised and monitored. Given their profit motive, a number of PPs are not interested in participating in the PPM scheme because they are more concerned with their own businesses than with following national guidelines and policies.

Malaria pre-elimination: The implementation is very challenging since it is "uncharted territory" in Cambodia, requiring significant technical, operational, and financial resources while also being a learning process. Working in pre-elimination mode rather than control and prevention alone requires a different way of thinking and acting, and systems and processes need to be adapted and introduced. CAP-Malaria's experience in year 5, regardless of outcome, will provide important lessons to the national program and its partners on how best to move forward toward malaria elimination.

Anti-malaria drugs: The new NTGs were finalized during 2014, providing a clear and sound policy basis for future treatment procedures. Procurement delay of co-formulated ASMQ resulted in the late application of the updated treatment regimen in Tier 1 areas. Despite the research is not yet completed regarding G6PD, CNM has recently approved single low dose of Primaquine for *Pf* malaria transmission block to be introduced whenever the SOP for Primaquine is endorsed. As such, CAP-

Malaria will need to prepare for its introduction by supporting BCC materials, training, and other activities.

3.3 Collaboration with CNM and other Stakeholders

CNM: CAP-Malaria works closely with CNM and other malaria partners in order to contribute to specific activities where needed. During Project Years 1-4, CAP-Malaria assisted with the distribution of about 1 million LLINs/LLIHNs procured under the GF. More than 52,000 conventional nets were treated with financial support from CAP-Malaria using GF-funded insecticides. From a technical point of view, CAP-Malaria has engaged WHO through CNM and sometimes directly as well as with other NGO partners to seek inputs for project strategic approaches, e.g. consultation on malaria pre-elimination in SPL OD (development of case investigation form, foci assessment, surveillance) and especially development of the national malaria elimination action framework for 2016 to 2020.

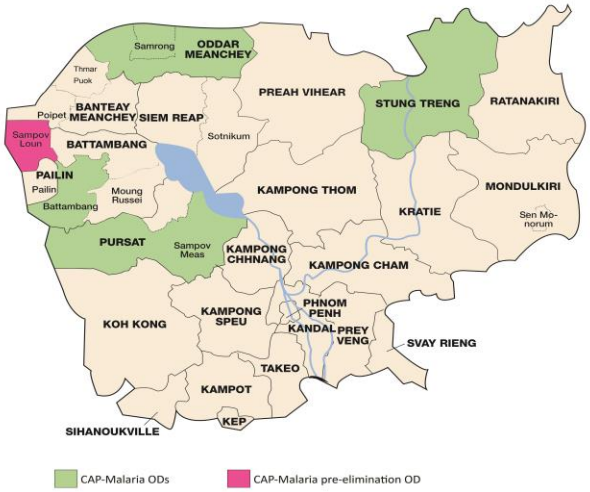
UNOPS: CAP-Malaria works with UNOPS (currently, the prime recipient under RAI project and the new GF funding model) and its sub-recipients to ensure that resources from PMI as well as GF are used strategically and without duplication. PSI/PSK is the lead PMI partner working with the private sector, so target areas and target groups are defined jointly, for example in one OD, PSI/PSK works with plantations with more than 50 workers while CAP-M works with plantations with less than 50 workers. Moving into year 5, however, CAP-Malaria will transition all its private sector work to CNM that would be further to PSI/PSK.

PARTNERS: CAP-Malaria works with other malaria partners at both national and local levels, ensuring that coverage is maximized and activities are harmonized. CAP-Malaria assists CNM and the GF in distribution of LLINs/LLHINs, focusing on MMP, and in filling gaps in the GF's supply chain in the project target areas. The main strategy for doing this is through the comprehensive OD annual operational plans (AOPs) which brings together all stakeholders working in the OD (including other USG malaria partners and local NGOs) to share responsibilities and leverage resources. Implementation of the AOP is jointly monitored by the OD/PHD and CAP-Malaria. CAP-Malaria has been closely working with health and non-health stakeholders, including local authorities and community networks, through the special working group mechanism from the provincial down to the district levels.

4 YEAR 5 TARGET, KEY ACTIVITIES AND JUSTIFICATION BY OD

In its year 4, CAP-Malaria project supported CNM in 11 ODs in 9 provinces. In year 5, the project will continue its support in 5 ODs in 4 provinces (BTB OD of Battambang province, SPM OD of Pursat province, SRG OD of Oddar Meanchey province, STT OD of Stung Treng province and SPL OD of Battambang province) where the majority of village malaria workers (VMWs) are directly managed by the project. The project will continue to implement the basic essential package of activities for malaria pre-elimination in SPL OD (SPL WP) on top of the normal control activities.

Figure4. Map of Geographical Target of CAP-Malaria in Cambodia



Areas targeted *(5 ODs in 4 provinces):*
-Sampov Meas (SPM) in Pursat province,
-Battambang (BTB) & Sampov Loun (SPL) in Battambang province,
-Samrong (SRG) in Oddar Meanchey province
-Stung Treng (STT) in Stung Treng province

Population covered in year 5:
- Total population: 1,170,000
- Risk population: 970,000 (Including MMPs)

Table2. Targeted ODs/HFs/Villages

OD	RH/FDH/HC/HP						Village			VMW	
	Total	Non-Endemic	Endemic (CAP-M)				Total	Endemic	Non-Endemic	GF-CNM	CAP-M
			RH	FDH	HC	HP					
Battambang	28	16	1	3	6	2	239	112	127	50	112
Sampov Loun	11	0	1	1	9	0	127	127	0	0	172
Sampovmeas	34	13	3	0	16	2	355	119	236	48	42
Samrong	32	0	2	2	22	6	361	291	70	120	176
Stung Treng	13	0	1	1	11	0	133	133	0	242	5
5 ODs	**118**	**29**	**8**	**7**	**64**	**10**	**1,215**	**782**	**433**	**460**	**507**

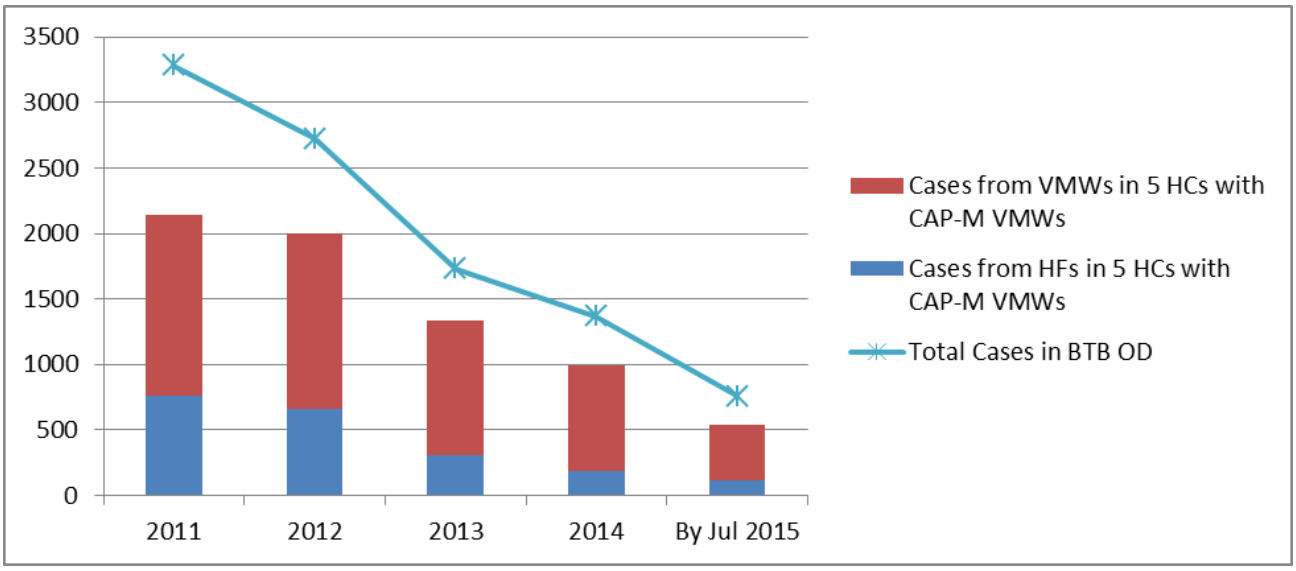
4.1 Battambang operational health district (BTB OD)

BTB OD of Battambang province (Tier 1) is located in Western Cambodia bordering with Thailand in the West, Pursat province (Tier 1) in the South and East and Banteay Meanchey province (Tier 2) in the North.

BTB OD had the population of 379,197 in 2014 and 386,324 in 2015. The area where CAP-Malaria has VMWs called Samlot district, one of the 5 administrative districts of the OD, there are 39,000 inhabitants in 2015.

Overall malaria cases in BTB OD had been sharply decreased since 2011 to 2014. In 2015, data is available only for 7 months (figure 5). This trend shown that community volunteers contribute enormously in malaria case detection and treatment.

Figure5. Trend of malaria reported cases in BTB OD by types of providers from 2011 to July 2015



The year 5 activities for BTB OD consist of:

- ***Malaria case management, treatment follow up and referral***: all malaria cases diagnosed will be treated with 3 days DOT. The follow up on Day-7 will be conducted only for *Pf* and Mix infection (through smear preparation and reading on Day-0 and Day-7). All patients detected malaria parasites on Day-7 or having malaria signs/symptoms will be referred to HF for further assessment and treatment.

  The project aims at providing appropriate and effective treatment to all patients and to capture treatment failure as soon as possible. This area had evidence of DHA-PIP resistance, the current treatment available regimens, and the arrival of ASMQ is not yet confirmed. In case of treatment failure, the second line treatment with quinine +/- tetracycline for 7 days that needs hospitalization at FDH/RH will be supported by the project for subsistent allowance to the patients.

  As shown in figure 5 above, the malaria cases in BTB OD had been decreased to the level that the above mentioned activities is applicable. This approach could help to build ground for malaria pre-elimination and elimination by CNM in the coming years. Moreover, the 5 HCs with CAP-Malaria supported VMW have been already familiar with malaria case treatment and follow up including smear making and filling TFU forms, especially Tasanh HC had been a *Pf* Day-3(+) surveillance sites for years and Boeng Run HC had experience with Malarone treatment and follow up in 2013. There is only refresher training needed for HF staff and VMWs to conduct this approach.

- ***Capacity building of service providers (VMWs/MMWs and HF staff):*** through trainings to 130 health workers. As mentioned above, the refresher training will be provided to 10 HFs staff in 5 HFs in Samlot district and 112 VMW/MMWs supported by CAP-Malaria on combined session for malaria case management (ASMQ is expected to be introduced to this

area) and surveillance system. As the new NTG 2014 emphasizes on using Artesunate IV as first line treatment for severe malaria cases, 8 staff from 1 RH and 3 FDH will be trained as well. CAP-Malaria will support orientation on the use of NTG 2014, when ASMQ available, to other 28 HF staff from 23 HCs (2 from each 5 endemic HFs and 1 from each of the 18 non-endemic HFs) where there are no CAP-Malaria supported VMW/MMWs. The capacity building approaches are not limited to training but also integrated during technical supportive supervision and monthly meetings.

- ***LLIN monitoring and topping up at HHs and farms along with health education via IPC***: The CAP-Malaria project plans to distribute 6,370 ITNs (4,900 LLINs+ 1,470 LLIHNs) to target population. This activity is only conducted by CAP-Malaria supported VMW/MMWs in 52 villages and farms/companies.

  As universal LLIN/LLIHN distribution had been conducted in this area in July 2015, the need for ITNs is only for new comers from non-endemic area and mobile people around the area for works who didn't carry their own nets along with them.

  The toping up is a solution to this issue and also provide opportunity for community volunteer to contact with high risk population giving them appropriate preventive messages, encourage constant use of LLIN/LLIHN and health seeking behavior as well as detecting malaria cases during their outreach activities

- Routine activities such as lab QA (section 5, IR2.2), VMW/MMWs monthly meetings (section 5, IR2.5), technical supervision, quarterly/semi-annual progress review and strategic information dissemination at OD level will also be continued (section 5, IR3.1-7)

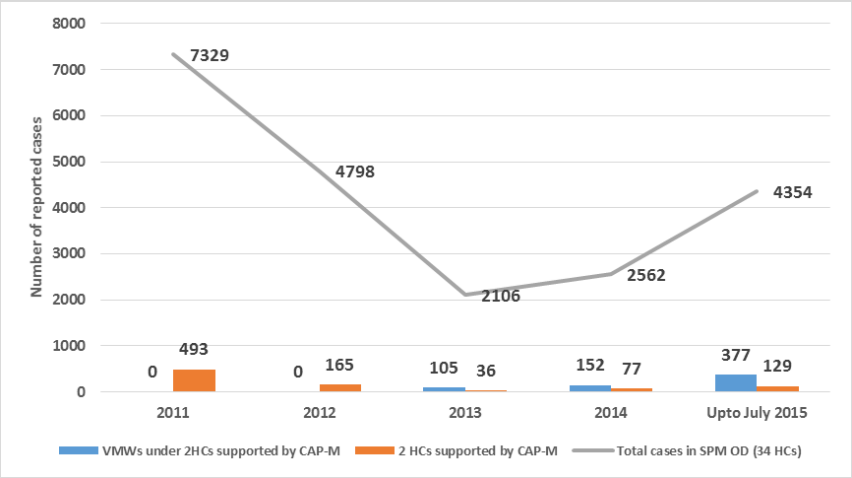
- Cross cutting activities include BCC/IPC (section 5, IR1.1-4), project end-line surveys (HH, Migrant) and activity assessment (section 5, IR3.6)

4.2 Sampov Meas operational health district (SPM OD)

SPM OD of Pursat province (Tier 1) is located in Western Cambodia, bordering with Thailand and BTB (Tier 1) in the West, Koh Kong province (Tier 2) in the South, and Kampong Chhnang province (Tier 2) in the East and Tonlesab Lake in the north. The SPM OD had the population of 280,473 in 2014 and 290,556 in 2015. CAP-Malaria has VMWs in two HCs with 21,321 inhabitants in 2015. These VMWs only recruited in late 2012.

Overall malaria cases in SPM OD had been fluctuated during the period 2011 to 2014 and sharply increased in 7 months in 2015 comparing to 2014 (figure 6). This trend may link with the high influx of population in 2015 from other area in making land clearance for agricultural farms and new settlement to the forested and mountainous area, especially in Veal Veng and Kravanh districts (Cardamom mountain chain), in the South Western Cambodia.

Figure6. Trend of malaria reported cases in SPM OD by types of providers from 2011 to July 2015



In response to this epidemiological change, CAP-Malaria has supported CNM/OD/HF/VMW to conduct investigation and response activities in Jul 2015. The findings were shared and strategic interventions adopted on supplies of malaria commodities and preventive interventions.

Routine malaria commodity supplies chain from central medical store (CMS) to the end users were not adequate for an unusual increase of cases and alternative supplies system should be in place. The supplies from CMS based on average monthly consumption (AMC) that didn't reflect on the fact that some services delivery points (VMWs) didn't use ACT/RDTs whereas others didn't have enough ACT/RDT on hand. The local health authority had decided to keep ACT at HFs and ordered VMWs to refer patients as a temporary solution.

Other finding was the delay of VMW monthly meeting due to the issue of GF budget that lead to CAP-Malaria support those meetings for ensuing surveillance information and supplies activities.

Three potential reasons of cases increased, particularly in 2015:

- New settlers/long stay of mobile population
- Net distribution delayed
- Potential resistant cases

The buffer of malaria commodities (RDT/ACT) at CNM is crucial for emergency supplies to end users. Coincidently, CNM received ACT from MSF that prevent the situation bad to worst. CAP-Malaria had facilitated supplies directly from CNM to end users.

On top of that, CAP-M and counterpart have close monitoring in those affected areas and the trend of malaria cases is slowly gone down in August and September based on the most update dashboard from SPM OD.

The year 5 activities for SPM OD consist of:

- In 2 HFs with CAP-Malaria supported VMW/MMWs (Svay Sor HC and Chheutom HC)
- ***Malaria case treatment and follow up and referral:*** all malaria cases will be treated with 3 days DOT. The follow up on Day-7 will be conducted only for *Pf* and Mix infection. All patients detected malaria parasites on Day-7 or having malaria signs/symptoms will be referred to HF for further assessment and treatment.

The project aims at proving appropriate and effective treatment to all patients and to capture treatment failure as soon as possible. This area had evidence of DHA-PIP resistance, the currently available regimens, and the arrival of ASMQ is not yet confirmed. In case of treatment failure, the second line treatment with quinine +/- tetracycline for 7 days that needs hospitalization at FDH/RH will be supported by the project for patient's subsistent allowance.

- CAP-Malaria supported MMWs in farms/companies under catchment of HC Promouy will only conduct 3 days DOT to all malaria cases.
- In other 16 endemic and 13 non-endemic health facilities, CAP-Malaria will not support this activity but will support capacity building (see below).

- ***Capacity building of service providers (VMWs/MMWs and HF staff):*** through trainings to 56 health workers. As mentioned above, the training will be provided to 4 HFs staff in the 2 HFs and 42 VMW/MMWs supported by CAP-Malaria on combined session for malaria case management (ASMQ is expected to be introduced to this area) and treatment follow up till Day-7. As the new NTG 2014 emphasizes on using Artesunate IV as first line treatment for severe malaria cases, 8 staff from 3 RHs and 1 FDH will be trained as well. CAP-Malaria will support 1 day orientation on the use of NTG 2014, when ASMQ is available, to other 49 HF staff from 31 HCs (2 from each 18 endemic HFs and 1 from each of the 13 non-endemic HFs). The capacity building approaches are not limited to training but also integrated during technical supportive supervision and monthly meetings.
- ***LLIN monitoring and topping up at HHs and farms along with health education via IPC***: The CAP-Malaria project plans to distribute 4,030 ITNs (3,100 LLINs+ 970 LLIHNs) to target population. This activity is only conducted by CAP-Malaria supported VMW/MMWs in 15 villages and 16 farms/companies.

  As universal LLIN/LLIHN distribution had been conducted in this area in July 2015, the need for ITNs is only for new comers from non-endemic area and mobile people around the area for works who didn't carry their own nets along with them.

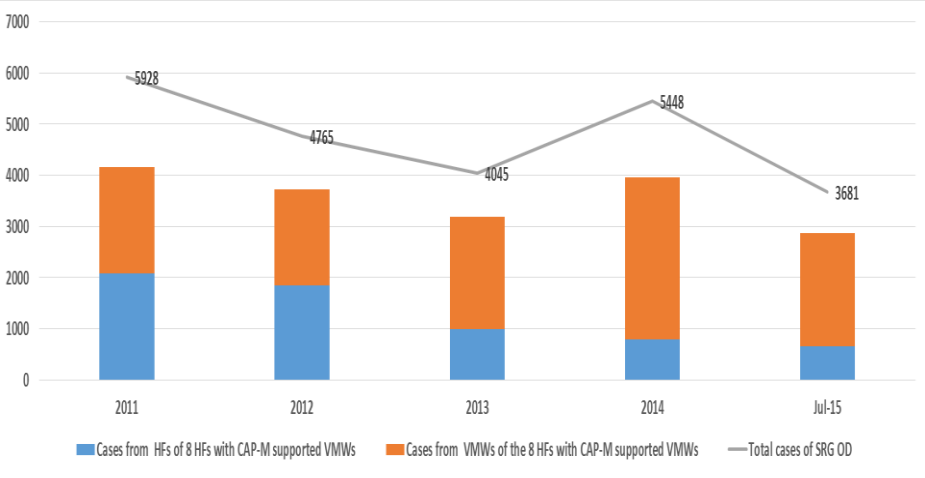
  The toping up is a solution to this issue and also provide opportunity for community volunteer to contact with high risk population giving them appropriate preventive messages, encourage constant use of LLIN/LLIHN and health seeking behavior as well as detecting malaria cases during their outreach activities
- *Outbreak response:* This area is prone to malaria outbreak. The effort made by CAP-Malaria and counterpart in July-August 2015 is a strategic information not only for responding to the current outbreak but also for outbreak SOP development (sect.5, IR1.2 &2.4).
- Routine activities such as lab QA (sect.5, IR2.2), VMW/MMWs monthly meetings (sect.5, IR2.5), technical supervision, quarterly/semi-annual progress review and strategic information dissemination at OD level will also be continued (sect.5, IR3.1-7)
- Cross cutting activities include BCC/IPC (Sect.5, IR1.1-4), project end-line surveys (HH, Migrant) and assessment (Sect.5, IR3.6)

4.3 Samrong operational health district (SRG OD)

SRG OD (Tier 1) located in the North of Cambodia, bordering with Thailand in the North, Preah Vihear (Tier 1) in the east, Banteay Meanchey (Tier 2) in the West and Siem Reap (Tier 2) in the South. SRG OD had the population of 231,387 in 2014 and 239,371 in 2015. CAP-Malaria has VMWs in 8 HCs with 98,537 inhabitants in 2015.

Overall malaria cases in SRG OD had been fluctuated during the period 2011 to 2014 and a bit increase in the first 7 months in 2015 comparing to the same period in 2014 (figure 7). This trend may link with the influx of population in 2015 from other area to work at agricultural farms and climb up the Dangrek mountain chain for wood cutting or cross the border to find works in Thailand, especially in HFs along the border areas, in the Northern Cambodia. In response to this epidemiological change, CAP-Malaria plan to streamline their strategic intervention based one malaria cases, population type and dynamic using HFs catchment area as strategic intervention unit.

Figure 7. Trend of malaria reported cases in SRG OD by types of providers from 2011 to July 2015



The year 5 activities for SRG OD consist of:

- ***Malaria case treatment and follow up and referral***: CAP-Malaria has VMW/MMWs supported in 8 HFs. In 4 HCs with low case load and adequate staffing (Anlong Veng, Trapeang Prasat, Trapeang Prey and Toumnub Dach HC), all malaria cases will be treated with 3 days DOT. The follow up on Day-7 will be conducted only for Pf and Mix cases detected cases by VMW. This approach could help to capture treatment failure at Day-7 and inform patients only the possibilities that they may have treatment failure and they should come back as soon as possible. Moreover, this area had evidence of DHA-PIP resistance, the currently available regimens, and the arrival of ASMQ is not yet confirmed. In case of treatment failure, the second line treatment with quinine +/- tetracycline for 7 days that needs hospitalization at FDH/RH will be supported by the project for subsistent allowance to the patients. These 4 HCs have been already familiar with malaria case treatment and follow up filling TFU forms, especially in Anlong Veng HC had been a Pf Day-3(+) surveillance sites for years. There is only refresher training needed for HF staff and VMWs to conduct this approach.

  For other 4 HCs (Ou Krouch, Pha Av, Romchek and Trapeang Tav HC) with also CAP-Malaria supported VMW/MMWs, will only conduct 3 days DOT to all malaria cases due to their high malaria case load, highly dynamic population and or insufficient government

staffing. For other 24 endemic HCs (with/without GF VMW), CAP-Malaria will only support activities in these HFs on capacity building (see below).

- ***Capacity building of service providers*** (VMWs/MMWs and HF staff) through trainings (66 health workers trained). It is similar to the 5 HCs in BTB ODs, the refresher training will be provided to 8 HFs staff in the 4 HFs and 50 VMW/MMWs supported by CAP-Malaria on combined session for malaria case management (+ASMQ) and treatment follow up till Day-28. As the new NTG 2014 emphasizes on using Artesunate IV as first line treatment for severe malaria cases, 8 staff from 2 RHs and 2 FDHs will be trained as well. CAP-Malaria will support 1 day orientation on the use of NTG 2014, when ASMQ is available, to other 46 HF staff from 26 HC/HPs (2 from each 20 endemic HFs and 1 from each of the 6 HPs) and to 38 VMWs supported by CAP-Malaria.
- ***LLIN monitoring and topping up*** at HHs and farms along with health education, emphasizing IPC to target population (8,300 LLINs+ 2,490) LLIHNs). This activity only be conducted by CAP-Malaria supported VMW/MMWs in 83 villages 2 farms/companies. As universal LLIN/LLIHN distribution had been conducted in this area in Jul 2015, the needs for ITNs is only for new comers from non-endemic area and mobile people around the area for works in the remote location who didn't carry their own nets along with them. The toping up is a solution to this issue and also provide opportunity for community volunteer to contact with high risk population giving them appropriate preventive messages, encourage constant use of LLIN/LLIHN and health seeking behavior as well as detecting malaria cases during their outreach activities
- Routine activities such as lab QA (sect.5, IR2.2), VMW/MMWs monthly meetings (sect.5, IR2.5), technical supervision, quarterly/semi-annual progress review and strategic information dissemination at OD level will also be continued (sect.5, IR3.1-7)
- Cross cutting activities include BCC/IPC (Sect.5, IR1.1-4), project end-line surveys (HH, Migrant) and activity assessment (Sect.5, IR3.6)

4.4 Stung Treng operational health district (STT OD)

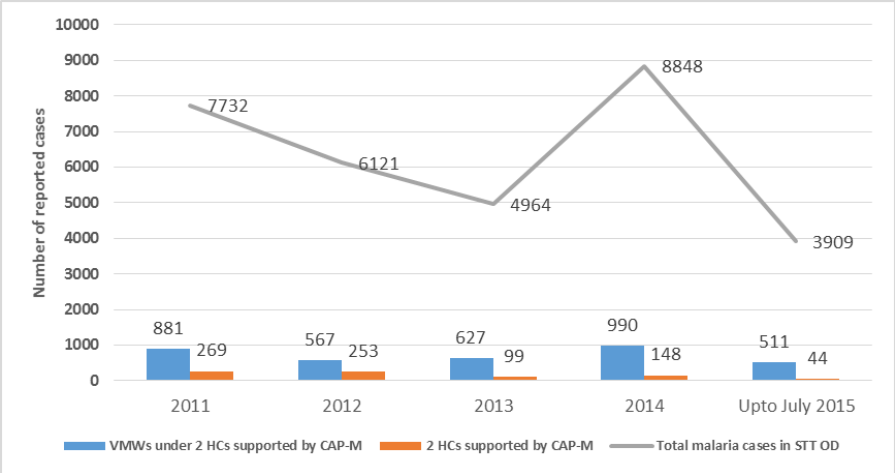
STT OD is located in the North Eastern Cambodia bordering with Laos in the North, Preah Vihear province (Tier 1) in the West, Kratie province (Tier 1) in the South and Ratanakiri (Tier 2) in the East. The OD has the population of 130,628 in 2015. CAP-Malaria plans to continue *Pf* Day-3(+) surveillance by community in 2 HCs (Preah Romkel HC and Thalaboriwat HC). The two HCs are located on the West Mekong river band bordering with Laos, Preah Vihear and Kratie provinces, with 27,471 inhabitants in 2015. These 2 surveillance sites were started in October 2014.

CAP-Malaria planned to exit from one health center surveillance site (Siem Pang FDH). This HF was split into 1 FDH and 1 HC resulting in moving staff from Siem Pang FDH to the newly set up HC and affect to the quality of community surveillance. Community *Pf* Day-3(+) surveillance remains important and could be used for strategic information as early warning sign of ARM and for guidance selecting TES sites. Based on NTG 2014, STT OD will keep using DHA-PIP as first line treatment for uncomplicated malaria cases (*Pf* and *Pv*).

CAP-Malaria does not have VMW in any of the 12 HFs in this OD. But CAP-Malaria has supported 4 MMWs who are living in deep forested area (touch points) under the catchment area of Siem Pang FDH (2 MMWs) and Thalaborivat HC (2 MMWs).

Overall malaria cases in STT OD had been highly fluctuated during the period 2011 to 2014 and cases in 7 months of 2015 accounted for half of the whole year in 2014 (figure 8). The trend of all malaria cases in the two HCs that CAP-Malaria plan to carry on activities in Y5 is similar to the OD trend.

Figure 8. Trend of malaria reported cases in STT OD by types of providers from 2011 to July 2015



The year 5 activities for STT OD consist of:

- In 2 HFs (Preah Romkil and Thalaborivat): CAP-Malaria support implementing Pf Day-3 (+) surveillance. In this approach, only *Pf* and *Pf*+Mix cases detected by VMW will be enrolled. Treatment provided with 3 days DOT and smears will be collected before treatment and 72 h (Day-3) after first dose of treatment. The follow up on Day-7 will be conducted only for smear (+) for *Pf* and *Pf*+Mix on Day-3 and screening only for Day-3 index household members. On top of that, 10 HHs surrounding the index HH will also receive health education, LLIN assessment/distribution. Only refresher training is needed for HF staff and VMWs to conduct this approach.

  This tier 2 will be continued to use DHA-PIP as first line treatment (NTG 2014), thus monitoring the early warning sign (Day-3+) is crucial to inform CNM for further exploration of ARM with Therapeutic Efficacy Study (TES) that is more accurate.

- Other 11 endemic HCs with GF supported VMWs; CAP-Malaria will only support activities in the health facilities on capacities building (see below).

- Capacity building of service providers (VMWs/MMWs and HF staff) through trainings (34 health workers trained). The refresher training will be provided to 4 HFs staff in the 2 HFs and 23 VMWs on *Pf* Day-3 (+) surveillance. As the new NTG 2014 emphasizing on Artesunate IV as first line treatment for severe malaria cases, 6 staff from 1 RH and 2 FDHs will be trained as well. CAP-Malaria will support 1 day orientation on the use of NTG 2014 to other 22 HF staff from 11 HCs (2 from each HF).

- Routine activities such as lab QA (sect.5, IR2.2), VMW/MMWs monthly meetings (sect.5, IR2.5), technical supervision, quarterly/semi-annual progress review and strategic information dissemination at OD level will also be continued (sect.5, IR3.1-7)
- Cross cutting activities include BCC/IPC (Sect.5, IR1.1-4), project end-line surveys (HH, Migrant) and activity assessment (Sect.5, IR3.6)

4.5 The normal control activities for SPL OD:

In SPL OD, CAP-Malaria has been implementing the basic essential package of activities for malaria pre-elimination since July 2015 and continuing till September 2016. In addition, CAP-Malaria continues to support the normal control activities that have been implemented since the beginning of the project. The activities consist of:

- VMW monthly meeting at HFs (168 VMWs)
- Technical supervision from CNM to PHD/OD/HFs, from OD to HFs/VMWs & from HF to VMWs
- ASMQ training (When the drug is available)
- Severe malaria case management training and technical discussion
- District special working groups for malaria elimination in all the 3 administrative districts

5 YEAR 5 DETAIL ACTIVITIES AND JUSTIFICATION BY IRS

CAP-Malaria project has implemented numerous actions in 2014 and 2015 in response to the RIG audit of 2014. This response is also reflected in the Year 5 work plan strategies and activities. For detail, please see in section 6. PROJECT M & E.

In Year 5, CAP-Malaria plans to implement key activities to support the strategic objectives with the following intermediate results (IRs):

- LLIN monitoring and topping up at HHs and farms along with health education, emphasizing interpersonal communication (IPC) to target population (HH members and workers)
- Malaria diagnosis and case management conducted by VMWs and HF staff. DOT applied to all malaria patients (CAP-Malaria is supporting VMWs' costs for DOT implementation)
- Case treatment follow up: *Pf*/Mix malaria cases are registered into TFU form ensuring complete follow up till Day-7 for 3 ODs (BTB, SPM, SRG and STT) and till Day-28 for all HFs in SPL OD
- Ensure supply chain management for laboratory supplies, RDTs, ACTs and other commodities, including LLINs and LLHINs
- Improve quality of diagnostics through microscopy QA as well as active supervision
- Improve capacity of service providers through training, technical supervision and meetings
- Conduct progress review and strategic information dissemination
- Promote provincial/district special working group for malaria elimination
- Conduct project end-line surveys (HH, Migrant) and activity assessment

5.1 IR1: Use of preventive interventions increased in CAP-Malaria target areas

Activity 1.1 Routine LLIN/LLIHN monitoring and topping up and IPC:

As CAP-Malaria winds down during its final year, distribution of LLINS/LLIHNs will be limited to topping up. During 2014 and 2015 CNM, with funding from GF, conducted a major exercise to replace nets that had reached their end of their useful lives. As such, net distribution will be more limited and targeted than has been the case in the past. CAP-Malaria will continue to support VMWs to visit households and farms to assess coverage and monitor net use and respond as needed and implement interpersonal communication (IPC) activities to support net use. The information collected will be shared with CNM and other stakeholders.

These activities will be carrying out in 3 ODs (BTB, SPM and SRG) that CAP-Malaria has VWMs, except STG OD. Among the 3 ODs, there are slightly different approaches:

- LLINs assessment and topping up is part of VMWs' routine activities (HHs and Farms visits) in 2 ODs: 5 of 28 HFs in BTB and 8 of 32 HFs in SRG.
- LLINs assessment and topping up is part of VMWs' outreach activities and outbreak responses in all the 3 ODs.

Activity 1.2 Respond to outbreaks or unusually high numbers of cases (as needed):

Preventive intervention is part of a package of response activities in the outbreak areas. The prevention package consists of PSA, IPC, ITN assessment and distribution and Community Theater (in selected location). Other activities in the outbreak response include case investigation and malaria screening (See IR2, Activity 2.4). For response finding in Y4, see sect.4, 4.2 SPM OD.

Activity 1.3 Support and Commemorate World Malaria Day Activities:

Support logistics and planning for WMD activities in the remaining 5 CAP-Malaria ODs. As the project phases out, it will no longer conduct or support larger malaria week activities.

Activity 1.4 Support and Organize Gender and IPC Training for Health Facility Staff:

Over the implementation period of the project, CAP-Malaria has been integrating IPC in to health education training curriculum for both health and non-health service providers and monitoring their activities in provision of malaria messages to the risk population.

Based on the findings through gender analysis conducted by consultants, there is a need to emphasize gender in the IPC training curriculum for service providers (HF staff and VMWs).

During year 5, CAP-Malaria will use the updated curriculum to train 2 staff from each targeted HFs and monitor the progress on their performance. The trained HF staff will be the resource persons for further training to VMWs, particularly during monthly meeting at HF.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR1: Use of preventive interventions among population increased in CAP-Malaria target areas									
1.1	Routine ITN monitoring and topping up	Coverage & use monitoring (HHs visit)	# of HH/Farm visited	BTB, SPM & SRG	42,326	20,267	-	20,267	1,792
		Toping up (LLINs/LLIHNs)	# of ITN distributed		20,650		10,650	5,000	5,000
		IPC (at HHs)	# of people reached by IPC		42,236	20,267	-	20,267	1,702
		IPC (at farms)	# of people reached by IPC		4,234	2,072	-	2,072	90
1.2	Outbreak response (ITN and HE)	PSA, IPC and ITN assessment	# of village received outbreak response	BTB, SPM, SRG & STT	30	10	-	20	
		ITN distribution	# of ITN distributed		1,500	500		1,000	
		Community theater	# of sessions conducted		10		5	5	
1.3	World malaria Day	Supporting logistics	# of event conducted	BTB, PST, OMC, STT	5			5	
1.4	IPC/C training for HF staff	Need assessment & training	# of HF staff trained	BTB, SPM, SRG, STT & SPL	178	89	89		
		Monitoring	# of HF visited		178		89	89	

5.2 IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased

Activity 2.1 Training on malaria case management:

The technical capacity of HF staff and VMWs/MMWs requires regular training/refresher training to maintain their skills and promote appropriate diagnosis and treatment. Trainings are organized for newly recruited staff or VMW/MMWs while refresher trainings are organized every 2 years for existing health workers. In addition, on-the-job training will be provided to poor performers during monthly meeting and technical supervision. RH/FDH staff will receive training in the management of both severe and uncomplicated cases, while training for HC/HP staff and VMW/MMWs will only address uncomplicated cases and referral of severe and complicated cases (malaria in 1st trimester of pregnancy, treatment failure, etc.).

In year 5, CAP-Malaria will support severe case management training to RH and FDH in all 5 ODs and uncomplicated malaria management training to cover the turnover of health workers. Recent field visit noticed that there are new physicians employed at RHs and FDHs who need training on malaria case management trainings.

The NTG updated in 2014 was printed but not orientation on its use for service providers has been delayed due to CNM waiting for the arrival of ASMQ. Nevertheless, in September 2015, CAP-Malaria supported TOT training on new NTG to PMS and OMS as resource persons who will provide orientation to HF staff and VMWs/MMWs.

Activity 2.2 Microscopy training and quality assurance (QA):

Following routine lab QA monitoring, additional training will be supported for HF staff to improve and maintaining microscopy skills. This activity is important because microscopy is the gold standard for malaria diagnosis and is necessary for proper treatment follow up. Lab QA system, a package of activities conducted by provincial lab supervisor to laboratory services in HFs including supplies

check, equipment storages, lab technician skills evaluation (slide preparation, reading and lab result recording), will be set up at a number of HF where resources are in place (microscope, lab staff, and supervision/monitoring). The set up will be conducted in 5 HFs in Sampov Meas OD, which was not covered with this activity during project year 4.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased among patients in CAP-Malaria target areas									
2.1	Case management training (+RDT)	Severe case management training to HF staff	# of RH/FDH staff trained	BTB, SPM, SRG, STT & SPL	48	48			0
		Technical discussion on admitted malaria cases	# of meeting conducted		3	1	1	1	
		Un complicated case management training to HF staff (new staff)	# of HC staff trained		50	20	20	10	0
		Un complicated case management training to VMWs/MMWs (new)	# of VMWs/MMWs trained		60	20	20	20	0
		Orientation of NTG to HF staff	# of people trained		180	180	0	0	0
		Orientation of NTG to VMWs/MMWs	# of people trained		507	507	0	0	0
2.2	Microscopy QA	Microscopy training	# of HF staff trained	BTB, SPM, SRG, STT & SPL	50	30	20		
		New set up system (Orientation and equipment/supplies)	# of HF with QA system set up	SPM	5	5			

Activity 2.3 Intensified malaria case management:

In the Artemisinin resistance areas, malaria diagnosis is made through RDTs/microscopy and completion of treatment with 3-day DOT implementation by CAP-Malaria VMWs/MMWs is continuing. Further follow-up of *P falciparum* cases until Day-7 will be implemented to ensure case is cured by using treatment follow form (TFU). Second line treatment will be initiated when patients still have malaria parasites between Day-7 and Day-28 or if patients turn positive during this time. The second line treatment ensures eliminating the resistant strain.

To ensure DOT quality, CAP-Malaria and HF staff will use different cross checking approaches through either calling malaria patients via phone numbers recorded in the TFU or physically visiting the patients in their villages.

In year 5, malaria case management will be managed slightly different based on ARM areas (Tiers) and availability of project's VMWs/MMWs as shown in table below:

Malaria Case Management and Treatment Follow Up in year 5					
Activities	**BTB OD**	**SPM OD**	**SRG OD**		**STT OD**
	5 HCs	2 HCs	4 HCs	4 HCs	2 HCs
DOT for Pv	yes	yes	yes	yes	no
DOT for Pf/Mix	yes	yes	yes	yes	yes
FU Day-1-Day-2	yes	yes	yes	yes	yes
Day-0 (Smear)	Pf & Mix	Pf & Mix	Pf & Mix	no	Pf & Mix
FU Day-3 (Smear)	no	no	no	no	**yes**
FU Day-7 (Smear)	yes	yes	yes	no	if Day-3 (+)

To ensure comprehensive malaria case management and treatment follow up: (i) 3 day-DOT treatment is applied; (ii) case treatment follow up is conducted till Day-7 for Pf and Mix infections; (iii) cases remaining positive on Day-7 will be referred for further follow up and treatment at Former district hospital (FDH) or Referral hospital (RH) where second line treatment would be an option. CAP-Malaria proposes the following approaches for malaria case management and treatment follow up in its target areas by specifying the HFs with VMWs/MMWs and a feasibility from one OD to another:

- In all area with CAP-Malaria supported VMW: All malaria cases will be treated and follow up for 3 days DOT.
- In 5 HCs in BTB, 2 HCs in SPM OD and 4 HCs in SRG OD (except 4 HCs in SRG OD): All Pf/mix case detected by VMW will be notified, treated and followed up until Day-7
- For STT OD, the only tier 2 in CAP-Malaria year 5 targets, Day-3 surveillance in 2 HCs will be continued for Pf and Mix cases and follow up on Day-7 and response will be conducted only for Day-3 positive cases. This tier 2 will be continued to use DHA-PIP as first line treatment (NTG 2014), thus monitoring the early warning sign (Day-3+) is crucial to inform CNM for further exploration of ARM with Therapeutic Efficacy Study (TES) that is more accurate.

To ensure quality of diagnosis and parasitological checking during treatment course and follow up, slides preparation are needed for all positive Pf and Mix cases detected with RDT by VMWs in Day-0 and then send to HF for reading. Follow up slides will be taken on Day-7 and sent to HF for reading and confirming if the case is cured or not and, if not, second line treatment is provided at FDH/RH. To ensure completeness of second line treatment, a compensation for referral cost and a 7 day hospitalization cost will be covered by the project.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased among patients in CAP-Malaria target areas									
2.3	Intensified case management	3 day DOT for all treated cases	# of Pv cases	BTB, SPM, SRG & STT	2800	700	700	700	700
			# of Pf cases	BTB, SPM, SRG & STT	2800	700	700	700	700
		3 day-follow up for Pf	# of slides sent from VMW to HF (Day-0 & 3)	STT	1200	300	300	300	300
		7 day-follow up for Pf	# of slides sent from VMW to HF (Day-0 & 7)	BTB, SPM & SRG	4400	1100	1100	1100	1100
		Slide reading at HF	# of slides red by HF (Day-0, 7 & 28)	BTB, SPM, SRG & STT	5600	1400	1400	1400	1400
		Refer patients to HF for complicated, severe and 2nd line treatment	# of patients referred	BTB, SPM, SRG & STT	210	60	55	50	45

Activity 2.4 Outbreak responses as needed (also see Activity 1.2):

Using data generated through the MIS/HIS system, conduct monthly trend analyses and work in partnership with CNM and local officials to implement appropriate responses. CAP-Malaria will provide supplies, support supplies mobilization including transport of RDT/ACT from Phnom Penh to the fields and support investigation, screening and treatment activities in the event of identified outbreaks. For preventive packages (see IR1, Activity 1.2).

In year 4, CAP-Malaria and CNM has developed SOP for malaria outbreak response which will be continued to finalize in year 5. This tool will be important for appropriate responses.

Activity 2.5 Support for VMW meetings:

CAP-Malaria will support VMW monthly meetings to 507 VMWs/MMWs (5HCs in BTBOD, 8HCs in SRG OD, 2 HCs in SPM OD and 10 HCs in SPL OD). The meetings are critical to retaining their skills and motivation, as well as for supplies and collection of data. HE through IPC is one aspect need to be emphasized as well as the orientation on the use of new drug (ASMQ) or new RDT, if it happens.

Activity 2.6 Emergency support to counterparts:

It is impossible to foresee each and every possible outbreak or logistical emergency. As such, based on experience gained in previous years, CAP-Malaria will reserve a limited amount of funds to enable it to meet emergency needs such as transportation of malaria commodities, support for planning meetings and monitoring trips under special circumstances.

Activity 2.7 Local procurement:

Based on experience from project years 1 through 4, some resources will be reserved for unanticipated equipment and materials needs for health facilities and VMWs in the remaining 4 target ODs. Local procurement for year 5 consist of office rental and supplies, vehicles maintenance, lab materials, documents, printing, bags, table, chair, stationeries and transportation costs.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased among patients in CAP-Malaria target areas									
2.4	Outbreak response (See also 1.2)	Investigation, Supplies, Screening and Treating	# of response session	BTB, SPM, SRG & STT	15	5	5	5	
2.5	VMW Meetings	Monthly meeting at HF	# of VMWs/MMWs attended	BTB, SPM, SRG, STT & SPL	6084	1521	1521	1521	1521
2.6	Emergency support to counterparts	Transport malaria commodities Support meetings Trip for PHD/OD/HF staff	# of emergency request supported	BTB, SPM, SRG & STT	16	4	4	4	4
2.7	Local Procurement	Office, Vehicle, Transportation, Purchase and produce equipment materials for HFs, VMWs …				x	x	x	

5.3 IR3: Use of Strategic Information for decision making increased

At the operational level, the information collected includes malaria cases, supplies, commodities, stock status, LLIN coverage, surveillance data and PPM data (although with the exception of SPL PPM will be discontinued in year 5). The information will be continued to be used to inform program needs including supply/commodity needs, health education priorities, and other programmatic gaps.

The information above will be also shared at the national level through direct contact, meetings, workshop to ensure appropriate policy responses.

CAP-Malaria assisted the CNM in revision of technical supervision checklists, national treatment guideline (NTGs), SOPs (microscopy QA, surveillance, and outbreak response), use of CIF for surveillance in pre-elimination, shares results from different assessment and activities as well as regular semi-annual/annual reports.

Activity 3.1 OD AOP's development and implementation:

The meetings to develop AOP provide the opportunity for all partners under leadership of CNM to discuss on activities and targets as well as harmonize strategies, responsibilities and allocation of resources in shared targets. The activities will be implemented based on the AOP and closely monitored. The progress review will give another opportunity for all partners to improve communication and data sharing about malaria, and jointly monitor progress. They have proven a valuable tool in strengthening country ownership and local-level planning.

Activity 3.2 Technical supervision and monitoring including lab QA and RDQA:

The implementation of planned activities requires regular supervision and monitoring so that improvement actions can be taken in timely manners. There are 5 key elements in technical supervision: program management, case management, laboratory services (lab QA), stock and supplies of malaria commodities and health information system. RDQA will be integrated with technical supervision at HF level. The line supervision is divided as following: from OD/PHD to HF on a quarterly basis and from HF to VMW/MMWs on a monthly basis. On top of that, supervision will be also conducted by CNM to selected ODs/HFs/villages.

On the job training could be done during this visit to HF staff and VMW/MMWs if required.

Activity 3.3 On site data verification: This activity is also part of RDQA conducted by central team (CNM/MOH and CAP-Malaria team) to targeted PHD/OD/HFs every 6 months to ensure quality and consistency of data submitted to national program and ministry of health.

Activity 3.4 Dissemination of Project Results: Lessons learned – not only about what works, but about what doesn't- will be shared more systematically during year 5 at both the OD and national levels to ensure that activities after the CAP-Malaria project ends benefit from the experience gained during the project. At least 5 workshops will be organized at the OD level (including SPL) and at least 1 at the national level.

Activity 3.5 National Annual Conference: CAP-Malaria will provide support to counterpart staff in its 5 target ODs to take part in the national annual malaria conference.

Activity 3.6 Conduct project end line survey: As CAP-Malaria draws to a close in project year 5, it is important to measure whether the project interventions have achieved the expected outputs and outcomes. Using the same questionnaire used for the baseline survey, an end line survey will be conducted among households, migrants, and HF/ODs in the remaining 4 ODs.

Activity 3.7 Conduct national data analysis workshop: A national workshop on M&E system and tools will be supported in year 5. CAP-Malaria and CNM will update implementing partners and field counterparts on CNM and CAP-Malaria M&E tools that have developed and introduced over the project life. The workshop will also disseminate the SOP on outbreak response that CAP-Malaria jointly developed with CNM.

Activity 3.8 Technical Assistance (TA): One consultant is needed as technical assistant to support the project staff to document project achievement and lessons learned and 1 TA for end line survey.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR3: Use of Strategic Information for decision making increased at national and local levels									
3.1	OD AOP development and implementation	Develop AOP at OD/ provincial level	# of sessions conducted	BTB, SPM, SRG & STT	4	4			
		Finalize AOP at national level	# of sessions conducted	4 ODs, CNM & NGO partners	1	1			
		Quarterly progress review (AoP, technical supervision, Lab QA, supply…)	# of sessions conducted	4 ODs/provinces	16	4	4	4	4
3.2	Technical supervision (including Lab QA and RDQA)	CNM/MOH to PHDs/ODs/HFs/VMWs	# of visit conducted	BTB, SPM, SRG, STT & SPL	16	5	5	5	1
		OD to HFs/VMWs/MMWs	# of HFs visited	BTB, SPM, SRG, STT & SPL	278	89	89	89	11
		HF to VMWs/MMWs	# of VMWs/MMWs visited	BTB, SPM, SRG, STT & SPL	4731	1521	1521	1521	168
3.3	On site data verification	CNM/MOH to PHDs/ODs/HFs/VMWs	# of visit conducted	BTB, SPM, SRG & STT	6	2	2	2	
3.4	Project result & SI dissemination	At OD level (With participation from PHD/CNM)	# of workshop organized	BTB, SPM, SRG & STT	4			4	
		At central level	# of workshop organized		1			1	
3.5	National Annual Conference	Supporting logistics	# of ODs supported	BTB, SPM, SRG, STT & SPL	5		5		
3.6	Project end line survey	HH & Migrant survey	# of survey conducted	BTB, SPM, SRG, STT & SPL	1			1	
3.7	Workshop on M&E (and outbreak response)	Organized the workshop	# of participants attended		1			1	
3.8	TA		# of TA		2			2	
3.9	Project staff capacity building	Skill on project documentation Team spirit and problem solving	# of workshop organized		1			1	

5.4 IR 4: Malaria control services for mobile populations strengthened through inter-agency

Activity 4.1 Multi-sectorial collaboration:

At the national level, coordination among malaria partners has been encouraged by CNM, for instance, through the creation of a malaria research network, a sub-technical working group, and taskforce for research, for NTGs revision, etc.

At PHD/OD level, the functioning of the Provincial Special Working Group for Malaria Elimination is crucial, ensuring participation and responsibility of all stakeholders at provincial and district levels. The meeting of this special working group is scheduled on a quarterly basis while its secretariat, the PHD team, plays key roles in preparing the agenda, planning activities, and implementing what has been recommended by the working group. CAP-Malaria field coordinators in all target provinces are members of the working group.

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR4: Inter-agency and inter-country collaboration strengthened for malaria control services									
4.1	Multisectoral collaboration	Meeting of provincial special working group for malaria elimination	# of meeting conducted	Battambang, Pursat, Oddar Meanchey & Stung	8	4		4	
4.2		Meeting of district special working group	# of meeting conducted	SPL	12	3	3	3	3

Inter-country collaboration: Data sharing on malaria and other diseases between Thailand and Cambodia will be continued by the twin-cities thank to Letter of Agreement was signed by both sides and action has been well taken (Without financial support from CAP-Malaria).

6 PROJECT M&E

Regional Inspector General (RIG) Audit Report: The project has implemented numerous actions in 2014 and 2015 in response to the RIG audit of 2014. This response is also reflected in the Year 5 work plan strategies and activities. Highlights of these actions are summarized below:

- **URC updated Y4 semi-annual reports to include**:
  - Information from surveys, focus group discussions or field assessment results (where appropriate) to provide context for planning and implementation of CAP-Malaria led activities; some example of information use for planning include
    - Village based stratification to prioritize hot spots and hot populations for targeting of activities and resource allocation (if needed)
    - Quantification and forecasting of commodities for procurement and for local distribution
  - Reporting of outputs, as well as description of activities and the targeted beneficiaries;
  - Discussion on challenges and limitations, and strategies for addressing challenges;
  - Description of lessons learned and good practices, such as examples of how results and data are used to better target resources or to adjust activities to the local contexts;
  - Descriptions of M&E data, including longitudinal trend analysis where feasible and continued to analyze data disaggregated by locations or coverage areas to provide a more targeted response.
  - Summary of progress report (translated to local languages where appropriate) to be shared with CAP-M field team and counterparts. Summary of progress may include simple tables, graphics, or dashboard by location.
  - In addition to the semi-annual report, CAP-Malaria and RDMA has agreed on a quarterly

report format for reporting quarterly updates on key indicators using a project indicator tracking table provided by RDMA.

URC will continue to routinely present strategic information, success stories and publications to the host country leadership at several levels as well as to USAID/RDMA and PMI leadership and will continue to improve and strengthen its progress reports to include more strategic information and analysis.

- **URC improved project management of data** under CAP-Malaria including:
  - Management of source data (paper-based source documents) and secondary data (electronic-based data) at each level of aggregations.
  - Password protection was installed on computers used by M&E staff at various levels, and monthly (minimum) back-up of secondary data on external hard drives. Ensuring compliance to security control of data management system will also be part of the project RDQA activities.
  - Full details of the management of project data are available in URC's response to the RIG audit.
- **Improved the project's monitoring, evaluation, and reporting system by:**
  - Employing a senior strategic information specialist to review its M&E framework and strategic information from the M&E for reporting aspects.
  - Revising its M&E plan (including the project indicator reference sheets) to improve clarity and improve its usefulness as a management tool.
  - Soliciting Quality Assurance support through Global Scientific Solutions for Health to 1) validate and verify data quality management processes, 2) provide an external assessment of implementation progress of the pre-elimination package in SPL, and 3) provide technical support in project documentation and dissemination for advocacy.
- **Strengthened the staffing capacity of its M&E teams** so the project could better verify data before submission to RDMA. This strengthening includes:
  - Recruitment of 4 new professional staff (Assistant Team Leaders) to support field-based team leaders and provincial coordinators and their counterparts to strengthen the quality of the health information system and management information systems at the OD level.
  - Completing training for CAP-Malaria staff and government counterparts located at health facilities, districts and provinces on routine data quality assessment for technical supervision.
  - Working more closely with OD health staff (at the first data aggregation level) to identify and correct errors in data captured in the HIS and MIS before submission to the next aggregated level in the MOH-HIS system. CAP-M obtain this set of verified data for the target ODs for strategic use such as reviewing malaria trends and hotspots, for project planning and tracking results.
  - Conducting quarterly Routine Data Quality Audit (RDQA) activities at health facilities in selected ODs.
  - Training the project team on how to use the malaria supervision tool and coaching all staff on the revised VMW supervision checklist that was developed in consultation with CNM.
- **Developing and initiating implementation of an exit plan** for sustaining CAP-Malaria-led activities in the geographical coverage areas, and planning for sustaining VMWs supervision.

- **Conducting a gender analysis and internal gender audit.** The analysis and audit were submitted to RDMA in late August 2015, and findings were presented to the CAP-Malaria team as part of the year 5 work plan development process. Next steps include a gender training for both Phnom Penh-based and field-based CAP-Malaria staff as well as key staff from CNM (conducted in late September 2015).

During year 5, CAP-Malaria will continue regular RDQA, technical supervision, AOP progress reviews and will conduct an end line survey and assessment of the outcome of various project interventions. To ensure timely notification of detected malaria cases in SPL OD, CAP-Malaria with support the CNM and MC establish SMS in the existing Day 0 surveillance system.

Table 3. Key project indicators and targets (linked to M&E Plan)

No.	Key project indicators	Y5 Targets	Data sources
IP1	Annual parasite incidence per 1,000 population	12	HIS/MIS Document review
IP2	Malaria mortality rate per 100,000 population	0.10	HIS/MIS Document review
OC1	Percentage of residents in CAP-Malaria targeted areas who slept under an ITN the previous night (Cambodia)	95%	Household survey
OC2	Percentage of migrants / migrant workers in CAP-Malaria targeted areas who slept under an ITN the previous night (Cambodia)	100%	Migrant survey
OC3	Percentage of uncomplicated malaria cases treated according to national malaria treatment guideline in CAP-Malaria target areas (Cambodia)	100%	Clinical audit
OP1F	Number of ITNs purchased by other partners that were distributed with USG funds	0	Project records
OP2F	Number of ITNs purchased in any fiscal year with USG funds that were distributed in this reported fiscal year	30,650	Project records
OP3F	Number of health workers trained in case management with artemisinin-based combination therapy (ACTs) with USG funds	785 (If no ASMQ, train only 161)	Project records
OP4F	Number of health workers trained in malaria laboratory diagnostics (rapid diagnostic tests (RDTs) or microscopy) with USG funds	835 (If no ASMQ, train only 211)	Project records
OP5F	Number of RDTs purchased in any fiscal year with USG funds that were distributed	9,000	Project records
OP6	Number of individuals reached with BCC messages through interpersonal communication (IPC)	166,634	Project records
OP7	Number of confirmed malaria cases reported in target districts		HIS/MIS, Project records
OP8	Number of malaria case maps developed and used in SPL OD	3	Project records
OP9	Number of target areas with AOP developed based on project strategic information	5	Project records
OP10	% of target areas that organize SI dissemination workshops	100%	Project records

No.	Key project indicators	Y5 Targets	Data sources
OP11	% of service delivery points experiencing stock out of ACT	0%	ACT stock status audit
OP12	% of service delivery points experiencing stock out of RDT	0%	RDT stock status audit
OP13	% of *Pf*/mix cases followed-up until Day-3	95%	Project records
OP14	% of *Pf*/mix patients receiving complete DOTs	95%	Project records
OP15	Number of provincial special working group for malaria elimination meetings organized	8	Project records

To strengthen availability of information on how the project is affecting women and men and to improve gender integration, in year 4 CAP-Malaria produced a gender analysis and audit. The findings will be used to ensure that the project adopts global best practices in gender sensitive programming.

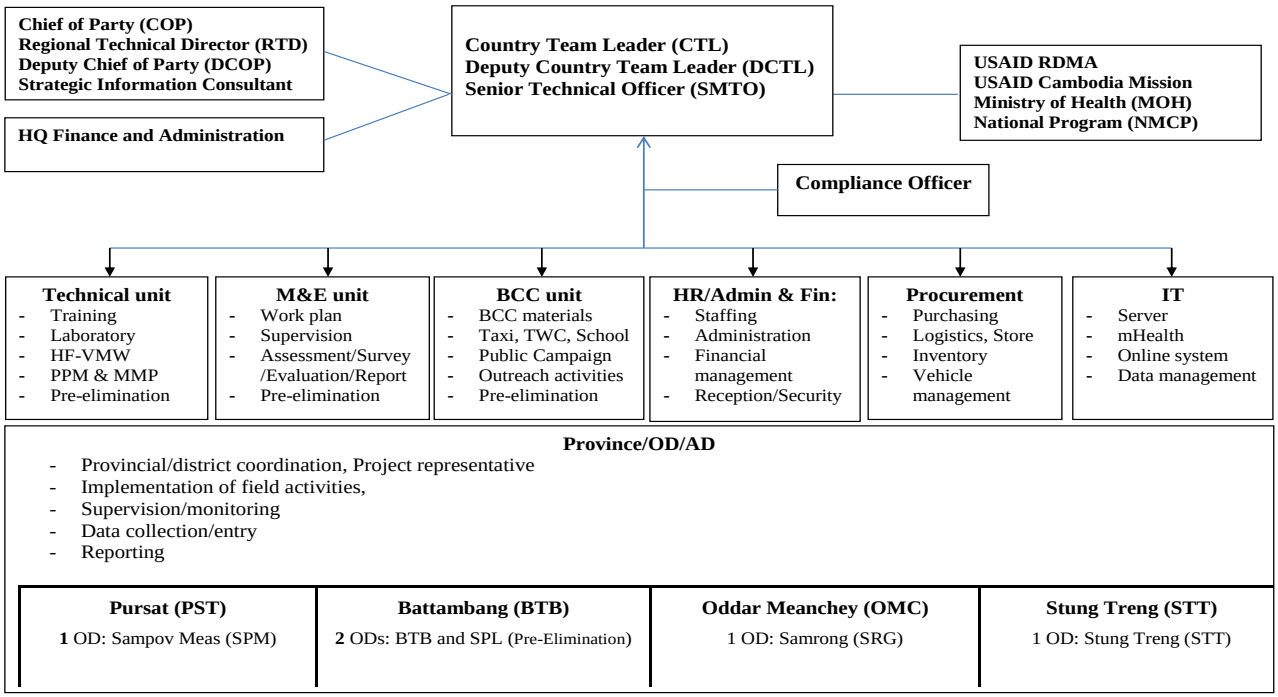
M&E results will continue to be discussed within the project team, with CNM at the central, provincial, OD, and facility levels, with an emphasis on identifying which program interventions and changes are having the most significant impact. For example, project staff work with OD supervisors, health center staff, and VMWs (in monthly meetings) to review malaria case data to identify trends in specific geographical areas and improve forecasting for RDTs and ACTs. Data, including findings from technical supervision at the provincial/regional/national levels, are also reviewed at quarterly OD AOP/stakeholder meetings. Recommendations from technical supervision are used to better track progress and to improve project implementation, and for planning. Trends in patient data are also discussed with CNM at the central level, to identify malaria hot spots and direct resources appropriately (e.g. LLIN distribution, BCC, and logistics management to avoid stock-outs).

7 PROJECT MANAGEMENT AND STAFFING PLAN

CAP-Malaria's management team members in year 5 are PhD. Darin Kongkasuriyachai as COP providing leadership and guidance for the project, supported by Dr. Soy Ty Kheang as Regional Technical Director (RTD) providing strong technical guidance and assisted by Mrs. Caroline Blair as the DCOP. The Cambodian team is headed by Dr. Sokomar Nguon as a country program manager and assisted by Dr. Chy Say as deputy country program manager (DCPM) and senior malaria technical officer (SMTO). The two latter take lead in the project technical areas and oversee the overall management of CAP-Malaria in Cambodia. The project mobilizes 3 field staff from the 3 phased out ODs to assist the remaining 5 ODs in year 5. The project would recruit one national M&E/SI specialist for supporting the current M&E unit, responsible for the pre-elimination in SPL OD and in generating strategic information (SI).

In addition, the project will strategically use short-term technical assistance (TA) to provide support for the design of specific initiatives, carrying out evaluations, as well as development of specific guidelines and tools to further refine project implementation and result documentation.

Organizational Chart for CAP-Malaria, Cambodia



8 PROCUREMENT PLAN

Procurement will be conducted locally for items required to supporting the project interventions. There are not any huge commodity needs foreseen during year 5. A limited amount of fund is reserved for procurement of key supplies.

9 CAP-MALARIA EXIT STRATEGY

During year 4, CAP-Malaria developed and submitted an exit strategy to present a roadmap for CAP-Malaria's phase out of interventions while ensuring goals, results and deliverables of the USAID | PMI-funded program are achieved and that most of the critical project-supported interventions will continue after the project ends. *Sustainability* of project-supported interventions is integral in the development of our exit plan (see exit strategic plan).

ANNEX:

YEAR 5 ACTIVITIES (OCT 15- SEP 16)

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR1: Use of preventive interventions among population increased in CAP-Malaria target areas									
1.1	Routine ITN monitoring and topping up	Coverage & use monitoring (HHs visit)	# of HH/Farm visited	BTB, SPM & SRG	42,326	20,267	-	20,267	1,792
		Toping up (LLINs/LLIHNs)	# of ITN distributed		20,650		10,650	5,000	5,000
		IPC (at HHs)	# of people reached by IPC		42,236	20,267	-	20,267	1,702
		IPC (at farms)	# of people reached by IPC		4,234	2,072	-	2,072	90
1.2	Outbreak response (ITN and HE)	PSA, IPC and ITN assessment	# of village received outbreak response	BTB, SPM, SRG & STT	30	10	-	20	
		ITN distribution	# of ITN distributed		1,500	500		1,000	
		Community theater	# of sessions conducted		10		5	5	
1.3	World malaria Day	Supporting logistics	# of event conducted	BTB, PST, OMC, STT	5			5	
1.4	IPC/C training for HF staff	Need assessment & training	# of HF staff trained	BTB, SPM, SRG, STT & SPL	178	89	89		
		Monitoring	# of HF visited		178		89	89	

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased among patients in CAP-Malaria target areas									
2.1	Case management training (+RDT)	Severe case management training to HF staff	# of RH/FDH staff trained	BTB, SPM, SRG, STT & SPL	48	48			0
		Technical discussion on admitted malaria cases	# of meeting conducted		3	1	1	1	
		Un complicated case management training to HF staff (new staff)	# of HC staff trained		50	20	20	10	0
		Un complicated case management training to VMWs/MMWs (new)	# of VMWs/MMWs trained		60	20	20	20	0
		Orientation of NTG to HF staff	# of people trained		180	180	0	0	0
		Orientation of NTG to VMWs/MMWs	# of people trained		507	507	0	0	0
2.2	Microscopy QA	Microscopy training	# of HF staff trained	BTB, SPM, SRG, STT & SPL	50	30	20		
		New set up system (Orientation and equipment/supplies)	# of HF with QA system set up	SPM	5	5			

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	**Q2** (Jan-Mar 16)	**Q3** (Apr-Jun 16)	**Q4 (SPL)** (Jul-Sep 16)
IR2: Use of quality malaria diagnosis and appropriate treatment (EDAT) increased among patients in CAP-Malaria target areas									
2.3	Intensified case management	3 day DOT for all treated cases	# of Pv cases	BTB, SPM, SRG & STT	2800	700	700	700	700
			# of Pf cases	BTB, SPM, SRG & STT	2800	700	700	700	700
		3 day-follow up for Pf	# of slides sent from VMW to HF (Day-0 & 3)	STT	1200	300	300	300	300
		7 day-follow up for Pf	# of slides sent from VMW to HF (Day-0 & 7)	BTB, SPM & SRG	4400	1100	1100	1100	1100
		Slide reading at HF	# of slides red by HF (Day-0, 7 & 28)	BTB, SPM, SRG & STT	5600	1400	1400	1400	1400
		Refer patients to HF for complicated, severe and 2nd line treatment	# of patients referred	BTB, SPM, SRG & STT	210	60	55	50	45
2.4	Outbreak response (See also 1.2)	Investigation, Supplies, Screening and Treating	# of response session	BTB, SPM, SRG & STT	15	5	5	5	
2.5	VMW Meetings	Monthly meeting at HF	# of VMWs/MMWs attended	BTB, SPM, SRG, STT & SPL	6084	1521	1521	1521	1521
2.6	Emergency support to counterparts	Transport malaria commodities Support meetings Trip for PHD/OD/HF staff	# of emergency request supported	BTB, SPM, SRG & STT	16	4	4	4	4
2.7	Local Procurement	Office, Vehicle, Transportation, Purchase and produce equipment materials for HFs, VMWs …				x	x	x	

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	Q2 (Jan-Mar 16)	Q3 (Apr-Jun 16)	Q4 (SPL) (Jul-Sep 16)
IR3: Use of Strategic Information for decision making increased at national and local levels									
3.1	OD AOP development and implementation	Develop AOP at OD/ provincial level	# of sessions conducted	BTB, SPM, SRG & STT	4	4			
		Finalize AOP at national level	# of sessions conducted	4 ODs, CNM & NGO partners	1	1			
		Quarterly progress review (AoP, technical supervision, Lab QA, supply…)	# of sessions conducted	4 ODs/provinces	16	4	4	4	4
3.2	Technical supervision (including Lab QA and RDQA)	CNM/MOH to PHDs/ODs/HFs/VMWs	# of visit conducted	BTB, SPM, SRG, STT & SPL	16	5	5	5	1
		OD to HFs/VMWs/MMWs	# of HFs visited	BTB, SPM, SRG, STT & SPL	278	89	89	89	11
		HF to VMWs/MMWs	# of VMWs/MMWs visited	BTB, SPM, SRG, STT & SPL	4731	1521	1521	1521	168
3.3	On site data verification	CNM/MOH to PHDs/ODs/HFs/VMWs	# of visit conducted	BTB, SPM, SRG & STT	6	2	2	2	
3.4	Project result & SI dissemination	At OD level (With participation from PHD/CNM)	# of workshop organized	BTB, SPM, SRG & STT	4			4	
		At central level	# of workshop organized		1			1	
3.5	National Annual Conference	Supporting logistics	# of ODs supported	BTB, SPM, SRG, STT & SPL	5		5		
3.6	Project end line survey	HH & Migrant survey	# of survey conducted	BTB, SPM, SRG, STT & SPL	1			1	
3.7	Workshop on M&E (and outbreak response)	Organized the workshop	# of participants attended		1			1	
3.8	TA		# of TA		2			2	
3.9	Project staff capacity building	Skill on project documentation Team spirit and problem solving	# of workshop organized		1			1	

IRs	Activities	Sub Activities	Indicators	Geographic (OD/Provinces)	Expected Output (Annual Target)	Milestones (Quarterly Target)			
						Q1 (Oct-Dec 15)	**Q2** (Jan-Mar 16)	**Q3** (Apr-Jun 16)	**Q4 (SPL)** (Jul-Sep 16)
IR4: Inter-agency and inter-country collaboration strengthened for malaria control services									
4.1	Multisectoral collaboration	Meeting of provincial special working group for malaria elimination	# of meeting conducted	Battambang, Pursat, Oddar Meanchey & Stung	8	4		4	
4.2		Meeting of district special working group	# of meeting conducted	SPL	12	3	3	3	3